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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, TAM V	

ART UNIT	PAPER NUMBER
2172	7

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/771,292	TOOHEY ET AL.	
	Examiner	Art Unit	
	Tam V Nguyen	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-24 are pending in this office action. Claim 1-24 are presented for examination. This office action is in response to the request of reconsideration 04/07/03.

Response to Arguments

2. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pereira (US 6108653).

Re claims 1 and 13, Pereira discloses constructing work granules that manipulate rows in a manner that groups the rows within said work granules according to logical storage units that contain the rows, (col. 9, lines 58-col. 10, lines and col. 11, lines 27-37); and during execution by entity of a particular work granule that involves manipulation operation for rows in a particular logical storage unit, (col. 11, lines 38-49): causing said entity to perform said manipulation operations for rows completely contained in said logical storage unit, (col. 11, lines 38-49); determining a set of

spanning rows that are partially contained in said logical storage unit and that satisfy a particular condition, (col. 4, lines 65-col. 6 , lines 13); and causing said entity to perform said manipulation operation for all pieces of all spanning rows in set of spanning rows, (col. 11, lines 38-49). Pereira does not clearly discloses ***constructing work granule and spanning rows.*** However, as taught by Pereira in FIG. 3 illustrates the structure of an Oracle data block. Each data block of an Oracle table is made up of a block header 90, block transaction information area 92, and a table and row directory 94 containing pointers to row data 96. The row data itself is filled bottom up. The above described elements are divided into block level information, block space usage information, row level information, row level space information, and information to measure block and file I/O, each present in some form or another in the block itself. For example, block space usage information is present in the block header 90. The number of rows, number of row directory entries, and deleted rows for the block can be found in the table and row directory area 94. The table and row directory provides pointers to find actual row data, (col. 9, lines 58-col. 10, lines 6). Thus, the table and row directory provides pointer to find actual row data as step of ***constructing work granule.*** Once a table is defined, the DBMS will allocate blocks for storage of the related data. For example, if a table is to be built to contain 100,000 rows, and the rows of the table were defined such that 100 rows could fit per block, the DBMS would allocate 1,000 blocks to build the table. Generally, DBMS systems allocate blocks in sets of contiguous blocks. A contiguous set of allocated blocks is commonly referred to as an extent. As a general rule, extents vary in size. Using the above example, the

DBMS may utilize a single extent of 1,000 blocks, 2 extents of 500 blocks, or any other combination of extent sites to allocate the required 1,000 blocks to build the table. Once the required blocks are allocated, the data is then stored in rows in the table utilizing the blocks allocated, (col. 3, lines 4-18) as step of ***spanning rows***. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pereira by including constructing work granule and spanning rows in order to increase the speed at which the analysis for determining the condition of a database table is performed, (col. 1, lines 10-13)

Re claims 2 and 14, wherein said particular condition is that each spanning row in said set start in said logical storage unit, (col. 9, lines 23-28).

Re claims 3 and 15, the method of Claim 1, wherein: said work granules include: a first work granule that involves manipulation operations for a first logical storage unit that includes a portion of a row, and a second work granule that involves manipulation operations for a second logical storage unit that also includes another portion of said row, (col. 5, lines 65-col. 6, lines 35); the method further includes: during execution of said first work granule, determining that said row satisfies said particular condition, and in response to determining that said row satisfies said particular condition, performing a manipulation operation for said row, (col. 4, lines 61-col. 6, lines 35); and during execution of said second work granule, determining that said row does not satisfy said particular condition, and in response to determining that said row does not satisfy said

particular condition, foregoing any manipulation operation for said row, (col. 4, lines 61-col. 6, lines 35).

Re claims 4 and 16, the method of claim 1, wherein said work granules are executed as part of transaction that includes a first sub-transaction and a second sub-transaction, wherein a first work granule is executed as part of said first sub-transaction and a second work granule is executed as part of said second sub-transaction, (col. 9, lines 54-65).

Re claims 5 and 17, the method of Claim 4, wherein said first work granule involves manipulation operations for a first logical storage unit that includes a portion of a row, (col. 3, lines 19-29); said second work granule involves manipulation operations for a second logical storage unit that also includes another portion of said row, (col. 3, lines 19-29); and the method further includes executing a manipulation operation for said row as part of said first sub-transaction, (col. col. 3, lines 19-29).

Re claims 6 and 18, the method of 5laim 5, wherein said first logical storage unit contains a first transaction list with a first entry, wherein said second logical storage unit contains a second transaction list with a second entry, wherein said step of executing a manipulation operation for said row includes assigning ownership of said first entry and said second entry to said first sub-transaction, (col. 3, lines 19-49).

Re claims 7 and 19, the method of Claim 1, wherein said particular logical storage unit includes a data block in said database system, (col. 3, lines 19-49).

Re claims 8 and 20, a method of inserting rows into logical storage units that store information in a database system, the method comprising the steps of: inserting a first row piece of a spanning row into a first logical storage unit, (col. 3, lines 19-36); prior to inserting a second row piece of said spanning row into a second logical storage unit, determining whether one or more criteria is satisfied, wherein said one or more criteria include that said second logical storage unit has enough space allocated to identify at least a threshold number of interested transactions, (col. 3, lines 66-col. 4, lines 34); and inserting said second row piece of said spanning row into said second logical storage unit only when said one or more criteria are satisfied, (col. 3, lines 19-36). Pereira does not explicitly teach ***spanning rows.*** However, as taught by Pereira once a table is defined, the DBMS will allocate blocks for storage of the related data. For example, if a table is to be built to contain 100,000 rows, and the rows of the table were defined such that 100 rows could fit per block, the DBMS would allocate 1,000 blocks to build the table. Generally, DBMS systems allocate blocks in sets of contiguous blocks. A contiguous set of allocated blocks is commonly referred to as an extent. As a general rule, extents vary in size. Using the above example, the DBMS may utilize a single extent of 1,000 blocks, 2 extents of 500 blocks, or any other combination of extent sites to allocate the required 1,000 blocks to build the table. Once the required blocks are allocated, the data is then stored in rows in the table

utilizing the blocks allocated, (col. 3, lines 4-18) as step of ***spanning rows***. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pereira by including spanning rows in order to store large data block.

Re claims 9 and 21, the method of claim 8, wherein a data structure in each logical storage unit of said logical storage units is used to identify interested transactions for said each logical storage unit, (col. 5, lines 65-col. 6, lines 13).

Re claims 10 and 22, the method of claim 9, wherein said data structure is a transaction list with entries, wherein each entry of said entries may be owned by an interested transaction, (col. 9, lines 54-63).

Re claims 11 and 23, the method of claim 8, wherein said one or more criteria include that said second row piece be the second or greater row piece in said spanning row, (col. 3, lines 66-col. 4, lines 6).

Re claims 12 and 24, the method of claim 8, wherein said threshold number is greater than the sum of the quantity of overflow row pieces stored in said second logical storage unit after inserting said second row piece, (col. 12, lines 14-25).

Contact Information

5. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam V Nguyen whose telephone number is (703) 305-3735. The examiner can normally be reached on 7:30AM-5: 00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Yen Vu can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for formal communications and (703) 746-7240 for informal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Virginia 22202. Fourth Floor (Receptionist).

6. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

TV:tv

6/13/03

SHAHID AL ALAM
PATENT EXAMINER